CLAIMS

1 An audio signal processing apparatus adapted for delivering an audio signal to a speaker system including at least two drive units or more which are divided or separated by frequency band,

the audio signal processing apparatus comprising:

filter means for processing the input audio signal on the basis of correction characteristic of impulse response of the speaker system in order to correct shift between phases of respective sound waves radiated from respective drive surfaces of the two drive units or more of the speaker system,

thus to deliver, to the speaker system, an audio output signal which has been caused to undergo signal processing by the filter means.

2 The audio signal processing apparatus as set forth in claim 1,

wherein the two drive units or more are caused to be of the configuration in which a drive unit for reproducing a signal at high frequency band and a drive unit for reproducing a signal at low frequency band are attached in the state where they are coaxially disposed.

3 The audio signal processing apparatus as set forth in claim 1,

wherein the filter means serves to realize correction characteristic of the impulse response by FIR filter to process the input audio signal.

4 An audio signal processing apparatus adapted for delivering an audio signal to a speaker system including at least two drive units or more which are

divided or separated by frequency band,

the audio signal processing apparatus comprising: first filter means having an arbitrary transmission characteristic which has been determined in advance by measurement or calculation; and second filter means having correction characteristic of impulse response of the speaker system in order to correct shift between phases of respective sound waves radiated from respective drive surfaces of the two drive units or more of the speaker system,

thus to deliver, to the speaker system, an audio output signal from the second filter means.

5 The audio signal processing apparatus as set forth in claim 4,

wherein transmission characteristic that the first filter means has is frequency characteristic in which group delay characteristic is constant.

6 The audio signal processing apparatus as set forth in claim 4,

wherein transmission characteristic that the first filter means has is characteristic for conducting a control such that sound image localization position in the case where an input audio signal is reproduced by plural speakers results in an arbitrary position.

7 The audio signal processing apparatus as set forth in claim 4,

wherein transmission characteristic that the first filter means has is impulse response characteristic of an arbitrary room.

8 The audio signal processing apparatus as set forth in claim 4,

wherein transmission characteristic that the first filter means has is impulse response characteristic of an electro-acoustic transducer.

9 The audio signal processing apparatus as set forth in claim 8,

wherein impulse response characteristic of an electro-acoustic transducer which is transmission characteristic that the first filter means has is impulse response characteristic of speaker or headphone system.

10 The audio signal processing apparatus as set forth in claim 8,

wherein impulse response characteristic of an electro-acoustic transducer which is transmission characteristic that the first filter means has is impulse response characteristic of record needle.

11 The audio signal processing apparatus as set forth in claim 8,

wherein impulse response characteristic of an electro-acoustic transducer which is transmission characteristic that the first filter means has is impulse response characteristic of recording/reproducing device.

12 The audio signal processing apparatus as set forth in claim 8,

wherein impulse response characteristic of an electro-acoustic transducer which is transmission characteristic that the first filter means has is impulse response characteristic of a frequency characteristic adding unit.

13 The audio signal processing apparatus as set forth in claim 8,

wherein impulse response characteristic of an electro-acoustic transducer which is transmission characteristic that the first filter means has is

impulse response characteristic of an audio amplifier.

14 The audio signal processing apparatus as set forth in claim 4,

wherein the first filter means serves to add, to the input audio signal, impulse response characteristic which has been selectively switched among impulse response characteristics of plural kinds of electro-acoustic transducers.

15 The audio signal processing apparatus as set forth in claim 4,

wherein the first filter means and the second filter means are comprised of FIR filter.

16 An audio signal reproducing system including:

a speaker system including at least two drive units or more which are divided or separated by frequency band; and

a signal processing unit comprising filter means for processing the input audio signal on the basis of correction characteristic of impulse response of the speaker system in order to correct shift between phases of respective sound waves radiated from respective drive surfaces of the two drive units or more of the speaker system,

whereby the signal processing unit delivers, to the speaker system, an audio output signal which has been caused to undergo signal processing by the filter means.

17 An audio signal reproducing system including:

a speaker system including at least two drive units or more which are divided or separated by frequency band; and

a signal processing unit comprising first filter means having an arbitrary transmission characteristic which has been determined in advance by measurement or calculation, and second filter means having correction characteristic of impulse response of the speaker system in order to correct shift between phases of respective sound waves radiated from respective drive surfaces of the two drive units or more of the speaker system,

whereby the signal processing unit delivers, to the speaker system, an audio output signal from the second filter means.